



# GUIDE TO THE WEBELOS FORESTER BADGE

*Tennessee Department of Agriculture, Division of Forestry*

*1. Make a map of the United States. Show the types of forests growing in different parts of the country. Name some kinds of trees that grow in these forests. For each type of forest, give one or more examples of uses for the wood of its trees.*

## **WEST COAST FOREST:**

**Location:** Coast Range, Cascade Range, and North Sierra Nevadas.

**Trees:** Primarily Douglas-fir; some hemlock, alder, cedars; spruce very near coast.

**Uses of wood:** lumber, plywood, paper, cardboard, poles and pilings large timbers, shingles and shakes, siding, particle board, laminated pre-shaped beams, arrow shafts, pencils.

## **ROCKY MOUNTAINS FOREST:**

**Location:** Mountains of the inland West

**Trees:** Ponderosa pine, lodgepole pine, white pine, Douglas-fir, true firs, spruce, hemlock, larch, aspen, juniper

**Uses of wood:** lumber, fence posts.

## **NORTHERN FOREST:**

**Location:** across northern US from Minnesota through northern ½ of Michigan to Upstate New York and New England.

**Trees:** Aspen, white pine, sugar maple, red maple, beech, ash, northern red oak, elms, basswood (linden), black cherry, red pine, jack pine, black spruce, balsam fir

**Uses of wood:** paper and paper products, lumber, furniture, fuelwood, mulch.

## **CENTRAL HARDWOOD FOREST:**

**Location:** Central uplands of the eastern US, from Piedmont to Missouri and mid-Michigan down to northern part of deep South states, including Appalachian Mountains

**Trees:** Great variety: many species of oak and hickories; various yellow pines including Virginia, shortleaf and loblolly; tulip poplar, red maple, sugar maple, blackgum, redcedar, sourwood, beech, elms, sycamore, black cherry, hackberry, ash, persimmon, black walnut, buckeye, black locust, white pine, hemlock.

**Uses of wood:** paper, paper products, pulp, furniture, lumber, flooring, tool handles, sports equipment, pallets, railroad ties, chip board, oriented strand board, chemicals, dowels, cedar chests, charcoal, interior paneling, crates, barrels, log homes, firewood, bark mulch.

## **SOUTHERN FOREST:**

**Location:** Deep South, from East Texas to Georgia and up the eastern seaboard to Maryland.

**Trees:** Loblolly pine, slash pine, longleaf pine, variety of upland and bottomland oaks, hickories, elms, sweetgum, blackgum, red maple, sycamore, tulip poplar, black cherry, tupelo, bald cypress, ash, persimmon, sassafras

**Uses of wood:** lumber, paper and paper products, telephone poles, pilings, particle and fiber board, chemicals.

### ***2. Draw a picture to show the plant and tree layers of a forest in your area. Label the different layers.***

The top layer is the **forest canopy**. Under that *may* be smaller trees such as dogwood or maple forming the **understory**. Beneath that is a **shrub layer** of bushes, vines and seedlings. Finally, on the ground, is the **litter layer**, composed of dead leaves and low-growing plants.

### ***3. Identify six forest trees common to the area where you live. Tell how wildlife and humans use them.***

**Oaks:** Human uses include lumber, furniture, flooring, railroad ties and pallets. Main animal use is as food (acorns.)

**Hickories:** Human uses include tool handles, charcoal and cabinets. Animals use hickory nuts for food.

**Redcedar:** Human uses include furniture, animal bedding, novelties. Animals eat berries, hide from enemies and get shelter from cold in the dense foliage; birds use loose strips of bark for nests.

**Tulip-poplar:** Human uses include lumber, molding and trim, paneling. Bees, butterflies and other insects eat nectar from flowers.

**Red maple:** Human uses include furniture and lumber. Wildlife eat the seeds and buds.

**Walnut:** Human uses include furniture and paneling. Wildlife eat the nuts.

**Yellow pine:** Human uses include paper and lumber. Wildlife eat the seeds and take shelter in the foliage.

**White pine:** Humans use white pine for lumber and log homes. Wildlife eat the seeds and take refuge in the dense foliage.

All the above provide perching and nesting habitat for birds, and cavities for bird and squirrel nests.

***4. Identify six forest plants other than trees that are useful to wildlife:***

**Wild grape, blackberry:** deer, squirrels and birds eat fruit.

**Greenbriar, honeysuckle:** vines eaten by deer, hiding cover for birds and small animals.

**Small annual plants (forbs):** eaten by deer

**Poison ivy:** leaves eaten by deer, fruit eaten by birds.

**Mushrooms** eaten by squirrels, deer, mice, etc.

**Grasses, ragweed, beggarticks, vetch, wild peas, smartweed, pigweed, goatweed:** seeds eaten by quail and other birds; grasses used to build nests. Hiding cover for birds and small animals.

***5. Draw a picture showing how a tree uses water, sunlight and minerals to grow.***

See booklet "Behind the Wall of Green" available from this office or on the TN Department of Agriculture's web site, [www.Tennessee.gov/agriculture/forestry](http://www.Tennessee.gov/agriculture/forestry).

Growing cells at the tips of branches need water to expand - like balloons. Growth slows or stops without sufficient water. Water carries plant nutrients from the roots up through the sapwood to the leaves. Food (sugar) produced by the leaves travels down through the phloem (inner bark) to feed the roots. The sapwood stores water and sugar.

Trees need several soil elements to grow: nitrogen, phosphorous, potassium, calcium, magnesium, iron, and tiny amounts of boron, copper, zinc, molybdenum, and other elements. These are vital ingredients in proteins, cell walls, chlorophyll, enzymes.

Most of the water and nutrients are picked up by microscopic "root hairs" near the surface of the soil. These tiny feeder roots are constantly growing, dieing, and regrowing. Most are within one inch of the ground. Deep tap roots on some species of trees bring up water when the surface soil is dry.

Fungus (mycorrhizae) that grows on and in the root itself helps greatly in gathering nutrients. The tiny fungal filaments reach out into the soil and greatly increase the effective surface area of the root. The tree feeds sugar to the fungus, and the fungus collects water and nutrients for the tree.

**7. *Collect pieces of three kinds of wood used for building houses.***

**Pine, Douglas-fir, spruce, fir:** studs and beams, plywood, subflooring.

**Oak:** furniture, flooring, cabinet doors.

**Birch:** cabinets.

**Yellow-poplar:** molding and trim, cabinets.

**White pine, spruce:** shelving, trim.

**Western redcedar:** shakes or shingles.

**Redwood:** siding, outdoor decks.

**Hickory:** cabinets

**Ash:** flooring, cabinets

**8. *Plant 20 forest seedlings. Care for them for a month.***

Seedlings can be ordered in lots of 500 from the TN Department of Agriculture Forestry Division. These seedlings can be successfully planted only from about mid-December through mid-March. A less expensive alternative is to collect seeds (acorns, maple, persimmon, ash, etc) and plant them in a marked and protected area, preferable in pots filled with good soil. After they grow for a year they can be moved.

**9. *Describe the harm caused by wildfires.***

- Wildfire can kill trees, especially in the Western US where fires are most intense. In the East wildfires sometimes kills trees, but more often they just injure them. Fire kills the inner bark, especially on the uphill side where leaves accumulate against the tree trunk. Fungus gets in these wounds and rots the heart out of the tree. This destroys their future value for timber.
- Wildfire burns houses and other property. This increases the cost of insurance for everyone who lives in the country.
- Wildfires can - and do - kill people.
- Very large fires can sometimes temporarily reduce populations of certain species of wildlife. Small fires usually benefit many kinds of animals.

- Hot fires over dry soil can cause erosion on steep mountainsides.
- Frequent fires can deplete soil humus and nutrients in some cases.
- Wildfires pollute the air.
- Fighting wildfires is expensive and dangerous.
- Burned-over areas are ugly.

***10. Draw an urban forestry plan.***

Some tips:

- Be sure the species you choose will not be too big for the place you plant it.
- If you plant under utility lines, use low-growing species like flowering crabapple.
- Try to determine if the soil is good enough to plant in. You should be able to easily dig into it. Soil in some urban areas has soil composed of rock, gravel, pieces of lumber or siding, and other building debris rather than good soil.
- Part of your plan should be long-term. Who will care for the trees? How? Urban trees often don't live long, by tree standards. How will trees be replaced? Will you allow time for replacements to grow before the older trees start dying?